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PROGRESS REPORT ON THE ICAO GLOBAL AVIATION SAFETY PLAN (GASP)

SUMMARY

Recognizing the need to reduce the worldwide accident rate, the Air Navigation Commission developed an ICAO Global Aviation Safety Plan (GASP) in 1997. The 32nd and 33rd Sessions of the Assembly in 1998 and 2001, respectively, endorsed the GASP concept and adopted resolutions on the subject. Assembly Resolution A33-16 instructed the Council to provide a progress report on the GASP to future sessions of the Assembly.

This paper presents a progress report on the development of the ICAO Global Aviation Safety Plan since 2001, outlines the current activities within the plan, and provides an updated version of the GASP.

Action by the Assembly is in paragraph 8.

REFERENCES

State letter AN 6/37-02/11
Doc 9790, *Assembly Resolutions in Force* (as of 5 October 2001)

1. BACKGROUND

1.1 In 2001, the 33rd Session of the Assembly reviewed a progress report on the Global Aviation Safety Plan (GASP). This report detailed the development of GASP since its inception in 1997, and outlined the safety achievements made under GASP umbrella. The Assembly adopted Resolution A33-16: ICAO Global Aviation Safety Plan (GASP) and instructed the Secretariat to distribute GASP to States and to promulgate it on the International Civil Aviation Organization website.

2. INTRODUCTION

2.1 One of the primary objectives of ICAO is to promote the safety of international air navigation. The role of the ICAO GASP includes facilitating the communication of safety-related information between governments and industry and promoting a cooperative and complementary effort amongst the various safety programmes being undertaken worldwide.

2.2 Beyond the external role mentioned above, GASP fundamentally serves to focus the safety-related activities of ICAO on those safety initiatives, either planned or in progress, that offer the best safety dividend in terms of reducing accidents worldwide. Accordingly, GASP helps focus the attention of aviation professionals, both within and outside ICAO, on current and future safety issues.

2.3 In order to make GASP more widely known and accessible, the GASP document was distributed to all contracting States in January 2002 by means of State letter AN 6/37-02/11, and has been placed on the ICAO (Air Navigation Bureau) website (http://www.icao.int/ANB/GASP).

3. OBJECTIVES OF THE GLOBAL AVIATION SAFETY PLAN

3.1 The objectives of GASP are to:

a) reduce the number of accidents and fatalities irrespective of the volume of air traffic; and

b) achieve a significant decrease in worldwide accident rates, placing emphasis on regions where these remain high.

3.2 In order to achieve these objectives, GASP aims to identify those tasks and programmes likely to produce the best safety dividend in terms of reducing accident numbers and rates both on a worldwide and on a regional basis. It is intended that GASP serve as a planning and tracking tool in order to monitor the progress achieved.

4. REVIEW AND UPDATE OF GASP

4.1 Aviation remains a dynamic industry with constantly emerging technologies which offer advantages but may also introduce new problems and safety challenges. At the same time, safety trends stemming from accident and incident statistics can reveal new threats that need to be adequately addressed, and in some cases, previously identified safety fixes have to be widely implemented. To reflect these realities, GASP needs to be periodically reviewed to ensure that it remains relevant. Accordingly, GASP is reviewed annually by the Air Navigation Commission.

4.2 To assist in keeping abreast of developments in the aviation industry, the Commission meets with leaders of the aviation industry periodically. The interchange of ideas and information at these meetings helps identify emerging safety issues and possible responses thereto. These meetings also provide an opportunity for the aviation industry to review GASP and to provide inputs towards its further development.

4.3 In the light of experience gained since the first edition of GASP was published in 2001, a revised edition dated 2004 has been developed and is attached. The new edition eliminates tasks that have been accomplished, adds new tasks to be reflected in the technical work programme of the organization, amends as necessary some of the existing tasks to take into account the work currently underway or planned, refocuses priorities in light of recent accident trends, and updates some of the language used in the original version.

5. GASP ACCOMPLISHMENTS

5.1 The more significant ICAO accomplishments and planned activities related to GASP during the 2002-2004 triennium are listed below under the headings of the six GASP elements.

5.2 Carry out an annual review of the causal factors in accidents and incidents using all available sources of information/data (Element 3.1)

5.2.1 At the beginning of each year, the Commission was provided with a detailed analysis of the previous years accidents, including safety trends. This analysis served as a basis for the GASP update. An ICAO circular was published annually summarizing the accident and incident data contained in the ADREP accident and incident database.

5.3 Recommend safety actions in response to findings of the ICAO Universal Safety Oversight Audit Programme (USOAP) (Element 3.2)

5.3.1 As of 30 April 2004, safety oversight audits of 181 States and five territories had been carried out. Seven States remain to be audited when conditions permit. By the same date, an audit follow up has been conducted in 138 States and three territories with the remaining audit follow ups scheduled in 2004.

5.3.2 Audit results have been entered into a database and the analysed information has been used by various ANC panels and air navigation study groups in their review and proposed amendment of Annex provisions and in the development of guidance material. The information has also been used to identify safety concerns at regional or subregional level. In this context, the creation of multinational entities to provide safety oversight, or the adoption of multilateral agreements, whenever appropriate, has been encouraged.

5.3.3 Seminar/workshops aimed at State officials and the aviation industry have been conducted with the objective of increasing the awareness of States regarding their safety oversight responsibilities under the *Convention on International Civil Aviation.*

5.4 **Enhance the identification of, and address deficiencies in, the air navigation field provided by all sources, including ICAO Planning and Implementation Regional Groups (PIRGs) (Element 3.3)**

5.4.1 The ICAO Planning and Implementation Regional Groups (PIRGs), as part of their work programme, are identifying, assessing and addressing air navigation deficiencies through a uniform methodology which was approved by the ICAO Council. The PIRGs, while analysing and prioritizing the list of deficiencies, are focusing on safety critical areas using the Global Aviation Safety Plan (GASP) as a model. Recognizing that many deficiencies continue to persist for a number of years, a personalized State letter from the Secretary General to the Ministers of Civil Aviation attached a list of relevant deficiencies and requested the Ministers to resolve the deficiencies through a plan of action and the allocation of appropriate resources. Other specific actions are being taken to address deficiencies in a more focused way.

5.4.2 A recommendation of the CAR/SAM/3 Regional Air Navigation Meeting called on ICAO to review the methodology of identifying deficiencies in the field of aeronautical meteorology. Appropriate guidance material has been developed and transmitted to regional offices to assist them in handling deficiencies in the field of aeronautical meteorology and to promote the consistent treatment of such deficiencies across the ICAO regions.

5.5 **Review and improve existing safety database systems to facilitate the dissemination of safety-related information (Element 3.4)**

5.5.1 A strategy for the protection of information from safety data collection systems in order to improve aviation safety will be proposed to the 35th Session of the Assembly in a draft Assembly Resolution.

5.5.2 ICAO participated in the activities of the Global Aviation Information Network (GAIN) government support team (GST).

5.5.3 ICAO involvement in the development of a European safety information database ensured that it was compatible with the ICAO accident and incident database (ADREP).

5.5.4 Work has continued on developing internationally accepted taxonomies for safety databases.

5.6 **Collaborate with States and the aviation industry to identify additional safety measures (Element 3.5)**

5.6.1 In 2003, the Eleventh Air Navigation Conference developed recommendations which in the ATM area addressed: a framework for safety; safety management; sharing of accident and incident data; the protection of sources of safety information; monitoring of safety during normal operations; safety certification; safety oversight; harmonization of aviation safety and security; and in-flight emergency response procedures for air traffic controllers. Recommendations of the conference in the communications, navigation and surveillance (CNS) area addressed the introduction of, and gradual transition to, new aeronautical systems supporting, communications, navigation and surveillance applications. Many of these recommendations will lead to new ICAO provisions and guidance material.

5.6.2 A fifth meeting of the Commission and industry was held in 2002 attended by participants from various sectors of the aviation industry, the Air Navigation Commission and the ICAO Secretariat. In the wake of the 11 September 2001 terrorist attacks, the meeting addressed security matters in addition to safety.

5.7 **Develop solutions to identified safety issues (Element 3.6)**

5.7.1 As regards new technology equipment to be installed onboard aircraft, amendments to Annex 6 introduced revised requirements for the carriage of ground proximity warning system (GPWS) with forward looking terrain avoidance function. This measure is expected to make a positive contribution to solving the problem of CFIT which remained in 2003 the largest category of fatal accidents worldwide.

5.7.2 In addition to amending Annex 6, the CFIT threats were addressed through amendments to Annex 10 concerning approaches with vertical guidance based on GNSS and through amendments to PANS-OPS introducing criteria for constant approach slope during non-precision approaches; criteria for stabilized approach procedures; provisions for SOP and checklist design and provisions for crew briefings. All existing safety enhancement tools related to CFIT were promoted in ALAR workshops.

5.7.3 With respect to the availability and quality of electronic terrain data, new Annex 15 provisions were adopted in 2004 facilitating the provision and exchange of appropriate, consistent and accurate electronic terrain and obstacle data. The amendment also included elements relating to airport mapping in electronic form and new provisions in Annex 4 address the standardization of electronic aeronautical chart presentation to flight crew.

5.7.4 Regarding the enhancement of air-ground communication procedures, new provisions for Annexes 1, 6, 10, 11 and the PANS-ATM were adopted that strengthen the obligation of States to ensure that air traffic control personnel and flight crews are proficient in radiotelephony communications in the English language in airspace where the English language is required.

5.7.5 Provisions for safety management systems for aerodromes were introduced in Annex 14 as part of the certification procedure which became applicable in 2003. Three workshops were held to assist States in implementing these new provisions. A new manual on safety management systems for aerodromes is expected to be completed in 2004.

5.7.6 A new manual on *Safety Management for Air Traffic Services* was finalized in 2003 and is expected to be published in 2004 in all languages. Work has commenced on extending the Line Operations Safety Audit (LOSA) concept to air traffic management (ATM), using the acronym of NOSS (Normal Operations Safety Survey).

5.7.7 Preparatory work for the expansion of USOAP, not only to Annex 11 and 14 but to all safety-related Annexes has been conducted in 2003 and 2004.

5.7.8 Regarding the need to establish and foster regional flight safety groups, a Flight Safety Enhancement Programme was established in 2003 in order to help coordinate the activities of various safety groups worldwide, and to disseminate generic technical material relating to the certification and surveillance of air operators and maintenance organizations.

5.7.9 New ICAO provisions and guidance material related to human factors have been developed for Annexes 6 and 17, the PANS-OPS, and a number of manuals and other guidance material. Human Factors Digest No. 16 - Cross-cultural Issues in Aviation Safety was published in early 2004.

5.7.10 An education and awareness campaign was begun to help States reduce runway incursions and to improve runway safety, particularly when implementing capacity-enhancing procedures. Three seminars, which included two days of safety management system presentations to ensure that safety was addressed throughout the entire system, have been held. A proposal has also been developed to amend the PANS-ATM, to include a definition for "runway incursion" and add a requirement for pilots and controllers to file an air traffic incident report following an occurrence involving an obstacle on the runway, or a runway incursion in order to facilitate the collection and analysis of data on runway incursions. An amendment to the PANS-OPS included the development or flight crew standard operating procedures (SOPs) for aerodrome surface operations.

5.7.11 As regards the enhancement of ATM equipment and procedures, new provisions pertaining to RNP and RNAV have been incorporated in Annex 11 and in the PANS-ATM. Provisions in Annexes 11 and 15 specify the need for ATC units to develop and publish emergency plans.

5.7.12 Amendments to the PANS-OPS introduced revised operational procedures for the use of airborne collision avoidance system (ACAS II) equipment, and new training guidelines for pilots in the operation of such equipment.

6. FINANCIAL IMPACT

6.1 The budgetary scenarios proposed for the 2005-2006-2007 triennium will considerably restrain the interaction between ICAO and many of the organizations engaged in aviation safety activities worldwide. A likely effect of these constraints will be a reduction in future developments under the GASP umbrella.

7. SUMMARY

7.1 In order to provide a structured approach to addressing safety, GASP has been developed with a four-level hierarchy comprising objectives, fundamentals, elements and tasks. The objectives and fundamentals of GASP are not expected to change often. On the other hand, the elements and their related tasks are dynamic, reflecting emerging safety threats, progress in technologies, changing priorities and completed tasks as reflected in paragraph 5.

7.2 To reflect the developments and changes which have taken place since 2001, a new edition of GASP dated 2004 is attached to this working paper. Following review by the Assembly, the updated GASP will be distributed to States by means of a State letter and be posted on the ICAO public website. In accordance with Assembly Resolution A33-16, a progress report on GASP will be presented to the next regular Session of the Assembly.

8. ACTION BY THE ASSEMBLY

8.1 The Assembly is invited to:

a) note the progress report on the ICAO Global Aviation Safety Plan (GASP) contained in this working paper and the updated version of the GASP document attached; and

b) urge States to support ICAO's efforts in accomplishing GASP objectives and tasks.

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APPENDIX

THE ICAO GLOBAL AVIATION SAFETY PLAN (GASP) (2004 EDITION)

1. OBJECTIVES

1.1 The objectives of the ICAO Global Aviation Safety Plan (GASP) are to:

a) reduce the number of accidents and fatalities worldwide irrespective of the volumes of air traffic; and

b) achieve a significant decrease in accident rates, particularly in regions where these remain high.

2. FUNDAMENTALS

2.1 In addressing these objectives, GASP concentrates on three fundamental aspects of a safety management system, as follows:

1st Fundamental — Reviewing the causal factors of aircraft accidents worldwide in order to identify specific safety issues which must be addressed to reduce accident numbers and rates. Attention will be given to the reasons for regional variations in accident rates;

2nd Fundamental — Keeping abreast of the activities of existing safety groups in order to identify safety issues which have global perspectives. In doing this, GASP focuses on those safety initiatives most likely to reduce accident numbers and rates; and

3rd Fundamental — Promoting safety awareness worldwide by facilitating the effective sharing and use of aviation safety data and information.

2.2 The Global Aviation Safety Plan therefore identifies those tasks and programmes likely to produce the best safety dividend in terms of reducing accident numbers and rates both on a global and regional basis. It is intended that GASP serve all parties involved in aviation safety, including acting as a planning and a tracking tool to monitor progress in the relevant areas of activity.

2.3 For practical application, the objectives and fundamentals of GASP are addressed by different focus areas, or elements, each having associated tasks and programmes as shown in paragraph 3.

3. ELEMENTS

3.1 Carry out an annual review of the causal factors in accidents and incidents using all available sources of information/data (1st Fundamental)

Related Tasks

a) Identify specific safety issues;

b) Identify the safety issues that result in differences in accident rates at a regional level;

c) Develop safety indicators to readily identify trends in safety performance; and

d) Disseminate the results of these activities for use in accident prevention programmes by States and industry.

3.2 Recommend safety actions and provide assistance in response to findings of the ICAO Universal Safety Oversight Audit Programme (USOAP) (1st and 2nd Fundamentals)

Related Tasks

a) Review the safety critical findings identified by the ICAO Universal Safety Oversight Audit Programme (USOAP);

b) Assist States in developing effective safety oversight structures, including, wherever appropriate, multinational entities;

c) Assist States in developing regulatory material; and

d) Promote the expansion of USOAP to all safety-related fields.

3.3 Enhance the identification of, and address deficiencies in, the air navigation field provided by all sources, including ICAO Planning and Implementation Regional Groups (PIRGs) (2nd Fundamental)

Related Tasks

a) Review the deficiencies and where possible provide guidance to States in the implementation of appropriate corrective actions.

3.4 **Review and improve existing safety database systems to facilitate the dissemination of safety-related information (3rd Fundamental)**

Related Tasks

a) Participate in the Global Aviation Information Network (GAIN) Government Support Team (GST) to explore ways to reduce impediments, legal or otherwise, to the communication of safety-related information;

b) Develop Annex provisions and guidance material for voluntary incident reporting systems;

c) Develop appropriate means to ensure the non-punitive nature of voluntary incident reporting systems;

d) Develop appropriate means to ensure non-disclosure of confidential safety information;

e) Participate in industry activities, such as the CAST/ICAO taxonomy working group, to develop common taxonomies to facilitate the worldwide coding, storage and dissemination of safety-related information;

f) Update Annex provisions aimed at facilitating the collection and dissemination of safety-related information;

g) Provide relevant safety-related information on an ICAO website; and

h) Develop Annex provisions and guidance material for normal operations monitoring systems.

3.5 **Collaborate with States and the aviation industry to identify additional safety measures (2nd Fundamental)**

Related Tasks

a) Liaise with the Commercial Aviation Safety Team (CAST) in the United States, the Joint Strategic Safety Initiative (JSSI) in Europe and any other potential safety initiatives;

b) Participate in industry/government safety initiatives addressing specific safety issues;

c) Examine current safety initiatives to determine their global perspective and likely impact on safety in order to decide if they warrant inclusion in the Technical Work Programme (TWP) of the Organization in the Air Navigation Field;

d) Hold regular consultations with aviation industry leaders. The purpose of these consultations, which gather representatives of industry and international organizations together with the Commission and supported by members of the ICAO Secretariat, is to:

i) update all participants on progress achieved on safety issues in the context of GASP;

ii) exchange information, and in light of the experience gathered by the industry, review accident data and proposals to develop further GASP initiatives; and

iii) allow the industry and international organizations to provide input into GASP.

3.6 **Develop solutions to identified safety issues (2nd and 3rd Fundamentals)**

3.6.1 ***Most significant issues****:* The most significant safety issues identified through an analysis of recent accident trends are:

a) CFIT: Although the number of CFIT accidents has been declining over the last three years, they still account for approximately one third of airline fatal accidents;

b) Loss of control: This type of accident is the second most important in terms of fatalities and it has not shown any improvement over the last three years. It is of particular concern in the take-off phase; and

c) Technical failures: This cause plays an increasing role in fatal accidents. It can affect the aircraft, its systems or engines, and has proven particularly critical in the take-off phase.

3.6.2 ***Related Tasks***

a) Analyse recent accident reports and other available information pertaining to CFIT occurrences in order to identify and address the remaining actions that need to be undertaken concerning such accidents;

b) Promote the implementation, wherever precision approaches are not available, of approaches with vertical guidance (APV) or non-precision approaches with a stabilized descent path;

c) Analyse all sources of information relative to loss of control accidents and those involving technical failures to identify corrective actions;

d) Develop Standards and Recommended Practices (SARPs) in order to prevent loss of control in flight;

e) Develop SARPs aimed at improving the technical reliability of aircraft and at limiting the consequences of technical failures;

f) Upgrade the provisions relating to licensing of maintenance personnel, especially as regards training and identification of privileges;

g) Establish and foster regional flight safety groups;

h) Increase the visibility and transparency of audit systems;

i) Monitor the introduction of safety management systems for aerodromes and air traffic services;

j) Monitor the progress achieved by States in implementing new language proficiency requirements and provide assistance as necessary;

k) Develop a revised edition of the Accident Prevention Manual; and

l) Develop a runway safety manual as well as a runway safety toolkit.

— END —